

ONTARIO. WATER RESOURCES COMMISSION

1970 Cottage pollution control program, Cameron Lake.

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ONTARIO WATER RESOURCES COMMISSION

ONTARIO DEPARTMENT OF HEALTH

1970 COTTAGE POLLUTION CONTROL PROGRAM

CAMERON LAKE

Based on the recommendations of the March, 1970, report on Environmental Management of Recreational Waters in Cottage Areas in Ontario, an interdepartmental field survey of Cameron Lake located in the Kawartha Lakes region was conducted during 1970.

During the summer, staff of the Ontario Department of Health's Public Health Engineering Service performed investigations of on-shore private sewage disposal systems. A map showing the locations of those systems which were found to be polluting or causing a public health nuisance is appended. Corrections are being carried out on these faulty systems.

Staff of the Ontario Water Resources Commission's District Engineers Branch conducted a water quality survey during the period of August 17 to 21, 1970.

The bacteriological results (see appended map) indicated that the water at the time of the survey generally met the OWRC criteria for total body contact recreational use. The exceptions were the regions of the inflows of the Burnt and Rosedale Rivers and Perrin Creek where the total coliform and/or fecal streptococcus criteria were not met. This is attributed to the discharge of impaired waters from the Rosedale River and natural-type pollution in the Burnt River flow. Also, the survey results suggest that fecal contaminants were probably flushed into the lake from the lake

environs during the August 19th rain or shortly thereafter causing the fecal coliform level to exceed 100 organisms per 100 ml at many stations along the southern shore at that time.

The chemical quality of the lake waters was found to be generally satisfactory. The hardness was approximately 60 ppm, which is slightly less than half that of Lake Ontario.

Thermal stratification, a natural occurrence in many lakes, was observed in the middle of the lake. The dissolved oxygen content in the surface waters was above the minimum level designated by the OWRC for the preservation of biological organisms; however, below 25 feet, it was below that required by the OWRC.

A more extensive water quality survey of Cameron Lake is presently underway. This survey, which includes three bacteriological sampling periods, should provide more comprehensive information on the water quality.

## BACTERIOLOGICAL INDICATOR ORGANISMS

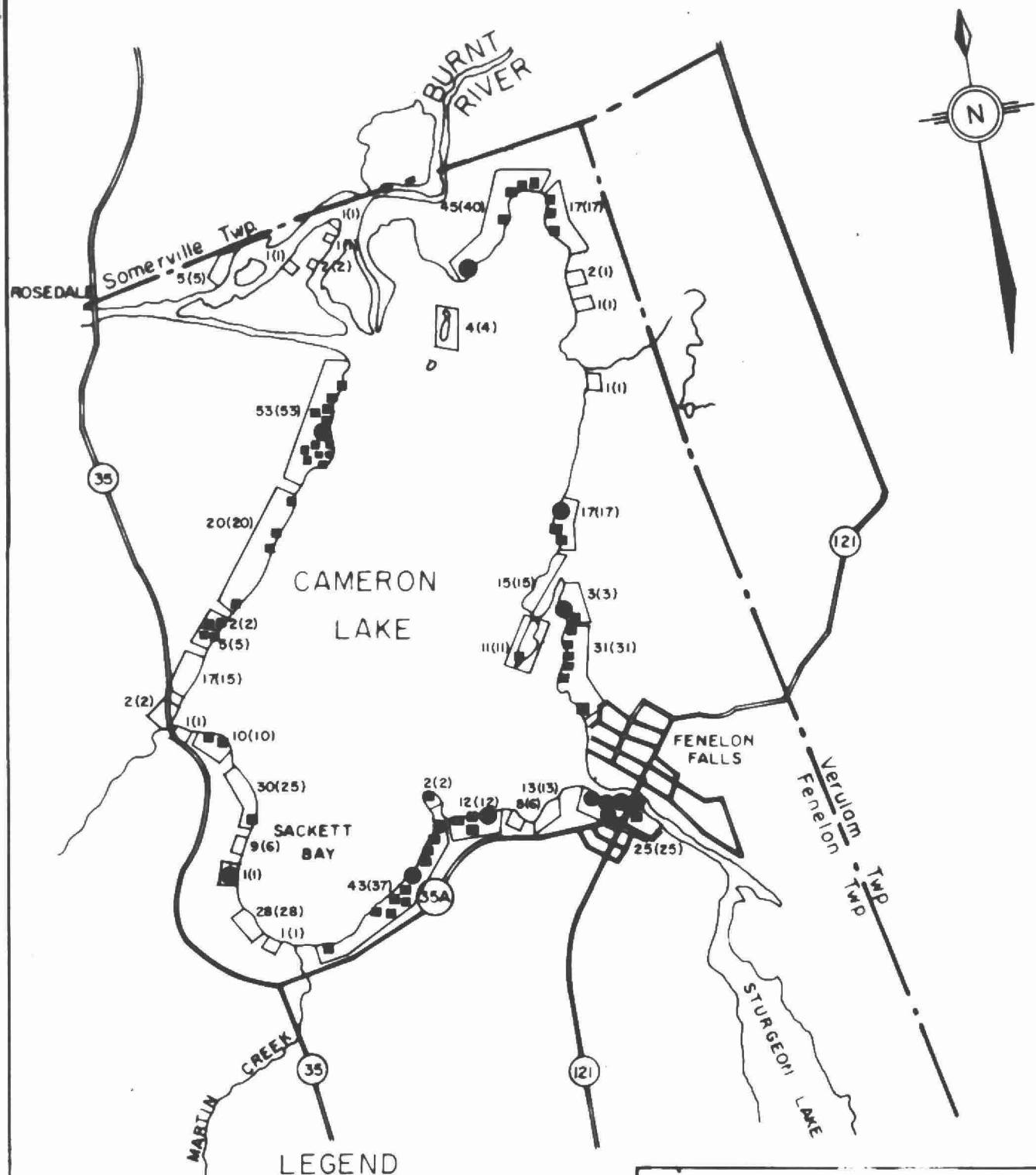
TOTAL COLIFORM organisms include a wide variety of bacteria ranging from the genus (group) Escherischia Coli (E. coli), which originate mainly in the intestines of man and other warm blooded animals, to the genera Citrobacter and Enterobacter aerogenes. The latter genera are basically found in soil but are also present in feces in small numbers. The presence of total coliforms in water may indicate soil run-off or, more important, less recent fecal pollution since organisms of the Enterobacter - Citrobacter groups tend to survive longer in water than do members of the Escherischia Coli group, and even to multiply when suitable environmental conditions exist.

The FECAL COLIFORM organisms are those coliform bacteria which are of intestinal origin and, therefore, are an indicator of recent fecal pollution. Most of the coliform bacteria found by the fecal coliform test are of the genus Escherichia Coli.

FECAL STREPTOCOCCI organisms are normal inhabitants of the large intestine of man and animals and generally do not multiply outside the human body. In waters polluted with fecal material, fecal streptococci are usually found along with fecal coliform bacteria but in smaller numbers. When the number of fecal streptococci bacteria approximates or is greater than the number of fecal coliform organisms, animals are the probable source.

The OWRC Guidelines and Criteria for Water Quality Management in Ontario (1970) indicate that water used for total body contact recreation can be considered impaired when the total coliform, fecal coliform, and/or fecal streptococcus geometric mean density exceeds 1000,100, and/or 20 per 100 ml, respectively.

NOTE: The term "geometric mean" refers to a type of average. Mathematically speaking, the geometric mean of a set of N numbers is the Nth root of the product of the numbers; in practice, it is computed by the use of logarithms.



ROADS -----  
 RIVERS OR STREAMS -----  
 TOWNSHIP BOUNDARY -----  
 POLLUTER -----  
 PUBLIC HEALTH NUISANCE -----  
 No. OF SHORELINE ESTABLISHMENTS ----- 10  
 No. OF ESTABLISHMENTS SURVEYED 1970 --- (5)

**NOTE:** THIS MEANS THAT IN THE OUTLINED AREA THERE ARE 10 SHORELINE ESTABLISHMENTS OF WHICH 5 WERE SURVEYED IN 1970

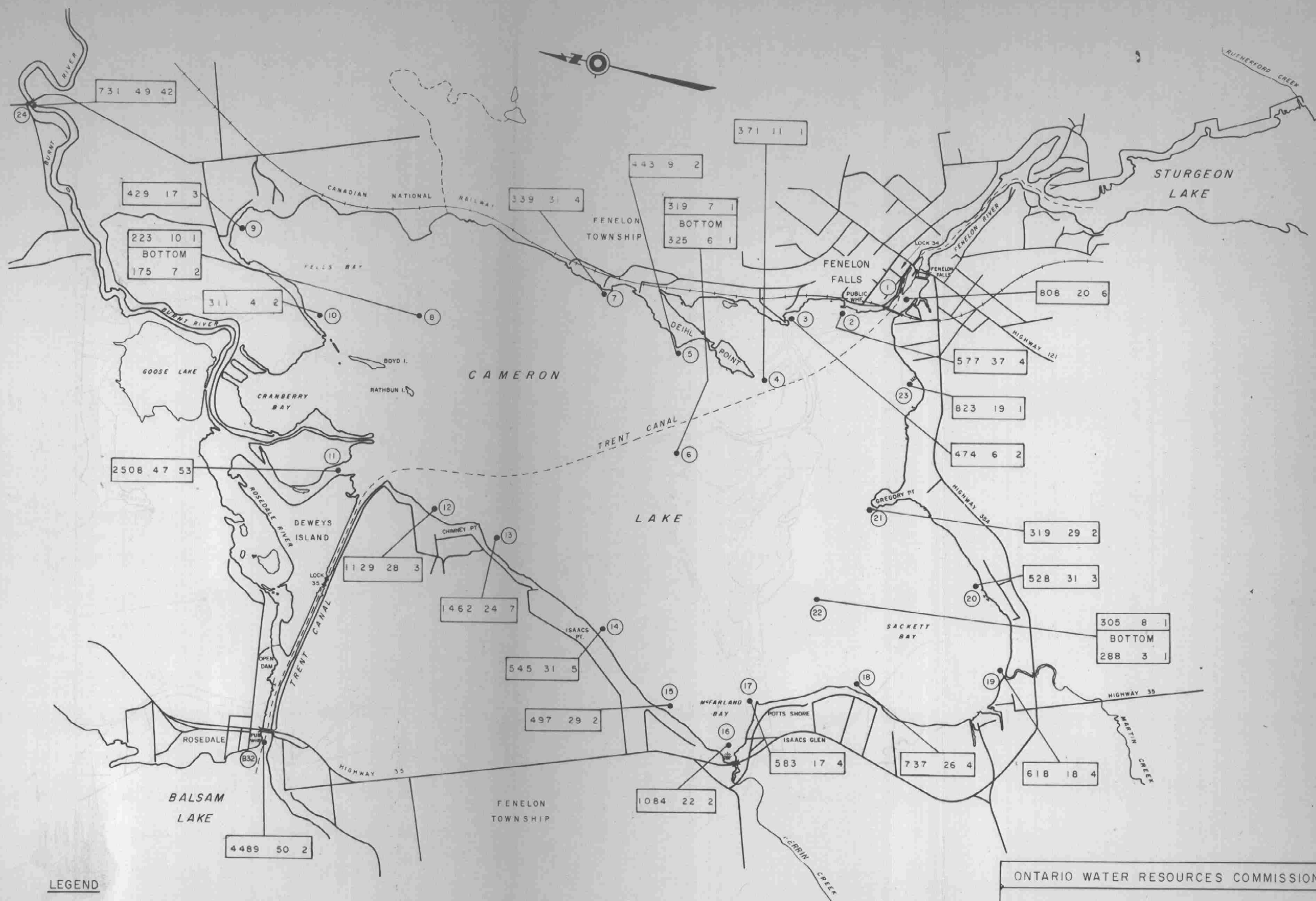
ONTARIO DEPARTMENT  
OF HEALTH

KAWARTHA LAKES AREA  
CAMERON LAKE  
AND BURNT RIVER

FENELON TOWNSHIP

SURVEY YEAR 1970

MAP 3



ONTARIO WATER RESOURCES COMMISSION

1970 RECREATIONAL LAKES PROGRAM

CAMERON LAKE

SCALE: AS SHOWN

DRAWN BY: A. J. H.

DATE: DECEMBER 1970

CHECKED BY: R. C. M.

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